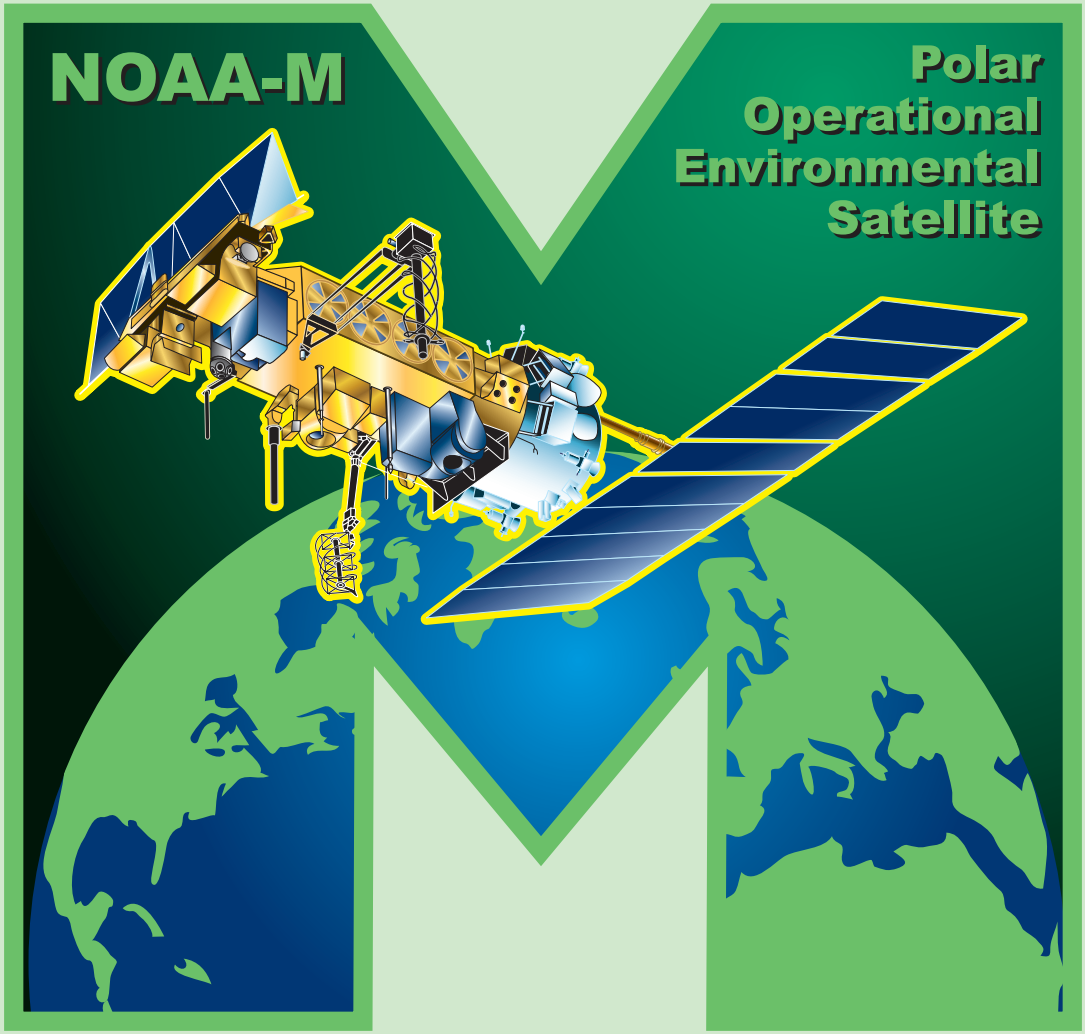
This booklet is dedicated to the memory of Harry G. McCain, POES Program Manager



http://poes.gsfc.nasa.gov

http://www2.ncdc.noaa.gov/docs/klm/index.htm

APPROVAL COPY

NOAA-M

National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland

U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
National Environmental Satellite,
Data, and Information Service
Suitland, Maryland

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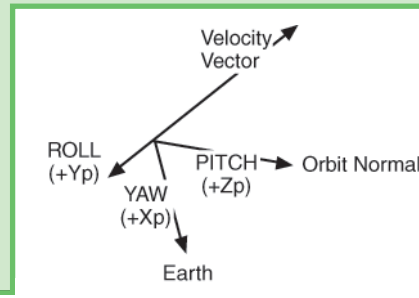
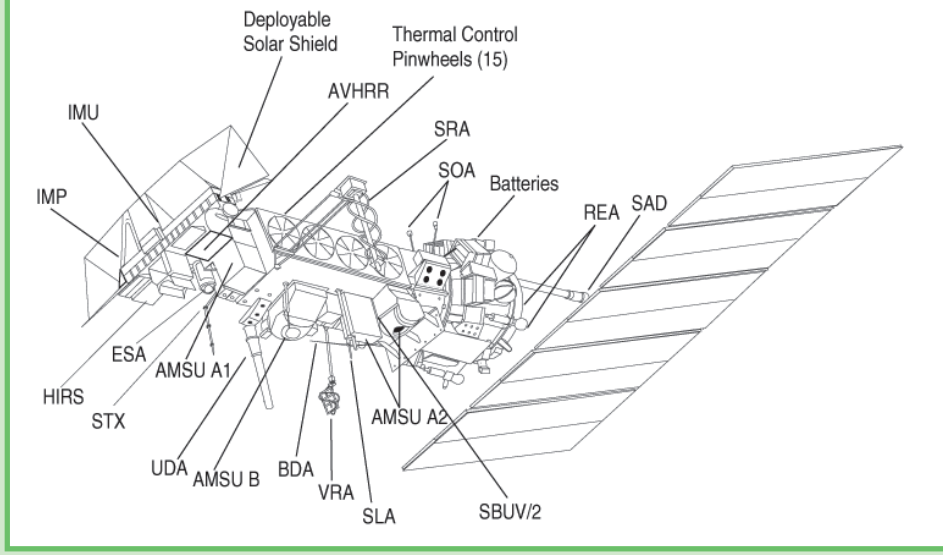
Instrumentation on board the NOAA-M spacecraft





LEGEND

AMSU	Advanced Microwave Sounding Unit	SBUV/2	Solar Backscatter Ultraviolet Radiometer
AVHRR	Advanced Very High Resolution Radiometer	SEM	Space Environment Monitor
BDA	Beacon Transmitting Antenna	SLA	Search and Rescue Transmitting Antenna (L-Band)
*DCS	Data Collection System	SOA	S-Band Omni Antenna (2 of 6 shown)
ESA	Earth Sensor Assembly	SRA	Search-and-Rescue Receiving Antenna
HIRS	High Resolution Infrared Radiation Sounder	STX	S-Band Transmitting Antenna (1 of 4 shown)
IMP	Instrument Mounting Platform	*TED	Total Energy Detector
IMU	Inertial Measurement Unit	UDA	Ultra High Frequency Data Collection System Antenna
*MEPED	Medium Energy Proton/Electron Detector	VRA	Very High Frequency Real-time Antenna
REA	Reaction Engine Assembly		
SAD	Solar Array Drive		
*SAR	Search and Rescue		

*Not shown in this view

POES PROGRAM

The NOAA Polar-Orbiting Satellites

The National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) have jointly developed a valuable series of Polar-orbiting Operational Earth Observation Satellites. These advanced Television Infrared Observation Satellites, ATN (named after the prototype satellite that was named TIROS-N), have been flying since 1978.

The system consists of a pair of satellites, which ensures that every part of the Earth is regularly observed at least twice every 12 hours. These satellites provide quantitative measurements of global atmospheric and surface forecast models. As users throughout the world have learned how to exploit this quantitative radiometric satellite data, the consistency and accuracy of the prediction of potentially catastrophic environmental events have improved significantly. Better prediction of these events allows emergency managers to activate plans to reduce their impact and protect life and property. In addition, this continuous overlapping source of satellite data has provided the foundation for extensive climate and research programs. In many developing countries and over much of the oceans, satellite data is the only source of quantitative information on the state of the atmosphere and of the Earth's surface, and is an invaluable source of real-time information about severe weather, critical for safety in these remote areas.

The satellites also support an international search and rescue program. Since 1982, this program is credited with saving more than 11,000 lives by detecting and locating emergency beacons from ships, aircraft, and people in distress.

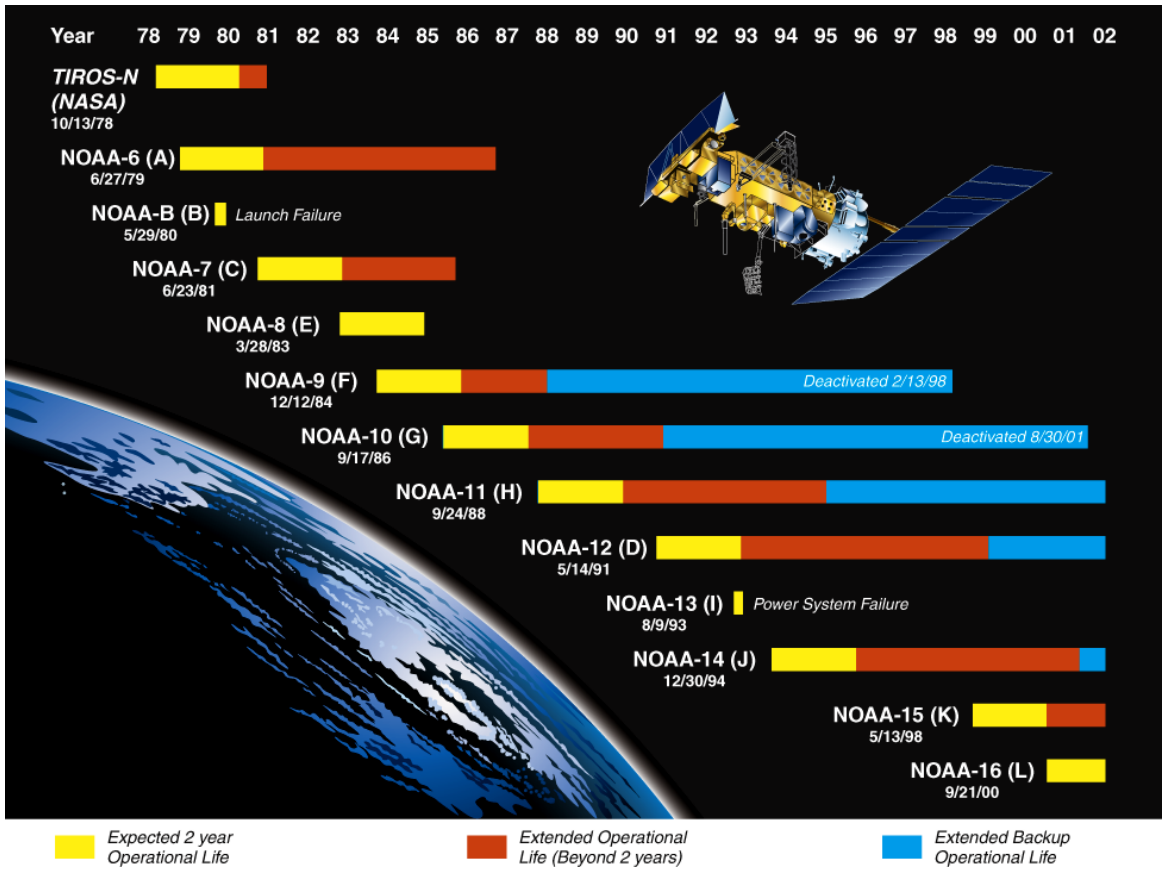
NOAA-M CHARACTERISTICS

Main body:	4.2 m (13.75 ft.) long, 1.88 m (6.2 ft.) diameter
Solar array:	2.73 by 6.14 m (8.96 by 20.16 ft.): 16.76 m^2 (180.63 $ft.^2$)
Weight:	At lift-off ~2231.7 kg (4920 lbs.) Weight includes 756.7 kg of expendable fuel.
Lifetime:	Greater than 2 years
Load Power Requirements	833 Watts for 0° sun angle, 750 Watts for 80° sun angle

NOAA-M

Lockheed Martin Space Systems Company

NOAA-M is the latest in the advanced TIROS-N (ATN) series built by Lockheed Martin Space Systems Company (LMSSC). The spacecraft will continue to provide a polar-orbiting platform to support the environmental monitoring instruments for imaging and measurement of



This figure summarizes the operational and extended lifetimes of the TIROS satellites.

the Earth's atmosphere, its surface, and cloud cover, including Earth radiation, atmospheric ozone, aerosol distribution, sea surface temperature, vertical temperature and water profiles in the troposphere and stratosphere; measurement of proton and electron flux at orbit altitude; remote platform data collection; and for SARSAT. Additionally, NOAA-M is the third in the series to support dedicated microwave instruments for the generation of temperature, moisture, surface and hydrological products in cloudy regions where visible and infrared (IR) instruments have decreased capability.